

ABSTRACT

FUNCTIONAL AND RADIOLOGICAL OUTCOME OF UNSTABLE FRACTURES OF THORACOLUMBAR SPINE TREATED WITH SHORT SEGMENT POSTERIOR STABILIZATION INCLUDING PEDICLE SCREW AT THE FRACTURED VERTEBRA – A PROSPECTIVE STUDY.

INTRODUCTION:

Spine fractures are common in today's world due to high frequency of Road traffic accidents and occupational injuries. These are major cause of disability in young and adult population. The mortality rate following spinal injuries is 7%. Thoracolumbar junction is the most mobile segment which makes it more prone to injury. Management of these injuries are still under debate. Internal fixation provides early mobilisation of the patients and protects the neurological structures. Conventional short segment stabilisation is associated with high failure rates especially if anterior column injury is severe. In these cases, short segment stabilisation with intermediate screws provides better stability and avoids future anterior surgery.

MATERIAL AND METHODS:

This is a prospective study done during the period of July 2015 to September 2017 in institute of orthopaedics and traumatology. Mean duration for surgery is 8 days. Dorso-lumbar fractures with intact pedicle on the fractured segment, Load sharing classification score of equal or less than 6, Neurologic involvement caused by the fracture, loss of vertebral body height by more than 50% and kyphosis angle more than 20° are considered as inclusion criteria for the study. Patients with multiple level fractures and pathological fractures were excluded from the study. After thorough clinical and radiological evaluation, eligible patients were processed for surgery. Denis classification was used. Load sharing score is used to decision making for intermediate screw fixation.

Thorough posterior approach, pedicles exposed to one level above and below. Pedicles screws inserted after making the entry point. In the fractured vertebra, pedicle walls are probed carefully and checked for intactness. Shorter screw length is preferred in those vertebrae. Indirect decompression is done in all cases by distraction. All the cases were followed up for clinical and radiological outcome.

RESULTS:

Males are more common victims in our study, average age being 31. Fall from height is the most common cause for injury. L1 is more frequently fractured followed by D12. 2 of our patients had complete neurological deficit. 11 had incomplete deficit and 7 patients doesn't have any neurological involvement. None of the patients deteriorated following surgery. Frankel A grade cases

remained in the same grade. All other cases showed some improvement. Calcaneal fracture is the most commonly associated fracture. 2 patients developed urinary tract infections, 2 developed bed sore and 1 cases developed superficial infections. All the cases responded well to treatment. None of the cases developed kyphosis or loss of correction in the follow up. Outcome using Roland Morris disability questionnaire is excellent in 64.3%, good in 21.6% and poor in 14.3% cases.

CONCLUSION:

From our study we concluded that short segment posterior stabilisation with pedicle screws at the level of the fractured vertebra provides better biomechanical stability when compared with conventional short segment fixation. This prevents Kyphotic collapse and restores the vertebral body height and provides better outcome especially in fractures involving the thoracolumbar junction. This will also provide additional stability to the construct and prevents implant failure. By reducing the levels fused it avoids further anterior surgery in patients with severe anterior column injury and provides better functional outcome to the patient

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KEY WORDS:

Thoracolumbar junction, intermediate screws, loads sharing classification, kyphotic angle.